

CLAIMS

1. A content distribution system comprising a license management server, a relay server and a terminal device,
wherein the license management server includes
5 a first license generation unit operable to generate, in a first format, a first license for controlling content use in the terminal device,
the relay server includes
a second license generation unit operable to generate, in a
10 second format, a second license by adding, to the first license, modification detection information for detecting a modification of the first license, the second format being different from the first format,
the terminal device includes:
15 a format conversion unit operable to obtain the second license from the relay server and convert a format of the second license into the first format;
a judgment unit operable to judge presence or absence of the modification of the first license whose format is converted by
20 the format conversion unit; and
a use unit operable to use the content according to the first license in the case where the judgment unit judges that no modification is made.
- 25 2. The content distribution system according to Claim 1,
wherein the license management server further includes a modification detection information generation unit operable to generate modification detection information for detecting the modification of the first license and further send the generated
30 modification detection information to the relay server depending on a transmission path to the terminal device.

3. The content distribution system according to Claim 2,
wherein, in the case where a frequency band of the
transmission path is narrower than a predetermined frequency
band or a communication speed of the transmission path is slower
5 than a predetermined communication speed, the modification
detection information generation unit sends the modification
detection information to the relay server and instructs the relay
server to generate the second license.
- 10 4. The content distribution system according to Claim 3,
wherein the second license generation unit generates the
second license whose data size is smaller than a data size of the
first license generated in the first format.
- 15 5. The content distribution system according to Claim 2,
wherein the license management server includes a first
sending unit operable to send the first license to the terminal
device,
the relay server includes a second sending unit operable to
20 send the second license to the terminal device via the transmission
path different from the transmission path in the case of using the
license management server, and
the terminal device obtains the second license from the
second sending unit.
- 25 6. The content distribution system according to Claim 5,
wherein the license management server further includes a
specification information receiving unit operable to receive an
input of format specification information that is an instruction, to
30 the terminal device, for converting the format of the second license
into the first format,
the second license generation unit generates a second

license including the format specification information received by the license management server, and

the format conversion unit converts the format of the second license into the first format according to the format specification information added to the second license.

7. The content distribution system according to Claim 6, wherein the modification detection information is a digital signature of the first license,

the license management server includes a signature generation unit operable to generate the digital signature, and the second license generation unit generates a second license including the digital signature.

8. The content distribution system according to Claim 1, further comprising a plurality of servers, one of which is the relay server according to Claim 1,

wherein each of the relay servers includes an "n"th license generation unit operable to generate an "n"th ("n" is a natural number that is 2 or greater) license, in an "n"th format, generated by adding, to the first license, modification detection information for detecting the modification of the first license, the "n"th format different from the first format, and

the format conversion unit obtains the "n"th license from one of the relay servers and converts the format of the "n"th license into the first format.

9. A license management server in a content distribution system comprising: the license management server; a relay server; and a terminal device,

wherein the license management server distributes a first license for controlling content use in a terminal device,

the relay server generates, in a second format, a second license by adding, to the first license, modification detection information for detecting a modification of the first license, the second format being different from a format used when the first
5 license is generated, and distributes the second license, and

the terminal device generates the first license by format transformation by obtaining the second license, detects presence or absence of the modification of the generated first license based on the modification detection information, and, in the case where
10 no modification is detected, uses the content according to the first license,

the license management server includes:

a first license generation unit operable to generate, in a first format, the first license; and

15 a modification detection information generation unit operable to generate modification detection information of the first license and send the generated modification detection information to the relay server.

20 10. The license management server according to Claim 9, wherein the modification detection information generation unit generates the modification detection information depending on a transmission path to the terminal device.

25 11. The license management server according to Claim 10, wherein, in the case where a frequency band of the transmission path is narrower than a predetermined frequency band or a communication speed of the transmission path is lower than a predetermined communication speed, the modification
30 detection information generation unit sends the modification detection information to the relay server and instructs the relay server to generate the second license.

12. The license management server according to Claim 11,
wherein the relay server generates the second license whose
data size is smaller than a data size of the first license generated in
the first format.

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13. The license management server according to Claim 9,
wherein the modification detection information generation
unit generates a digital signature of the first license and sends the
generated digital signature to the relay server.

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14. The license management server according to Claim 9,
wherein the license management server further includes:
a specification information receiving unit operable to receive
an input of format specification information that is an instruction,
15 to the terminal device, for converting the format of the second
license into the first format; and
a specification information sending unit operable to send
received format specification information to the relay server.

20 15. A relay server in a content distribution system comprising: a
license management server; the relay server; and a terminal
device,

wherein the license management server distributes a first
license for controlling content use in a terminal device,

25 the relay server generates, in a second format, a second
license generated by adding, to the first license, modification
detection information for detecting a modification of the first
license, the second format being different from a format used when
the first license is generated, and distributes the second license,
30 and

the terminal device generates the first license by format
transformation by obtaining the second license, detects presence

or absence of the modification of the generated first license based on the modification detection information, and, in the case where no modification is detected, uses the content according to the first license,

5 the relay server includes:

 a second license generation unit operable to generate, in the second license, the second license by adding, to the first license, the modification detection information of the first license generated in the first format; and

10 a second sending unit operable to send the generated second license to the terminal device.

16. The relay server according to Claim 15,

 wherein the second sending unit sends the second license to
15 the terminal device via a transmission path different from the license management server.

17. The relay server according to Claim 15,

 wherein the modification detection information is a digital
20 signature of the first license, and

 the second license generation unit generates a second license including the digital signature received from the license management server.

25 18. The relay server according to Claim 15,

 wherein the second license generation unit receives format specification information from the license management server, the format specification information being an instruction for making the terminal device convert the format of the second license into
30 the first format, and generates the second license including the format specification information.

19. A terminal device in a content distribution system comprising: a license management server; a relay server; and the terminal device,

5 wherein the license management server distributes a first license for controlling content use in the terminal device,

the relay server generates a second license generated, in a second format, by adding, to the first license, modification detection information for detecting a modification of the first license, the second format being different from a format used when
10 the first license is generated, and distributes the second license, and

the terminal device uses the content according to the first license by obtaining the second license and generates the first license using format conversion,

15 the terminal device includes:

a format conversion unit operable to obtain the second license generated in the second format from the relay server, converts a format of the obtained second license into a first format different from the second format, and generates the first license;

20 a judging unit operable to judge presence or absence of the modification of the generated first license based on modification detection information added to the second license; and

a use unit operable to use the content according to the first license in the case where the judgment unit judges that no
25 modification is made.

20. The terminal device according to Claim 19,

wherein the format conversion unit converts the format of the second license into the first format according to format specification information that is added to the second license and is
30 an instruction for making the terminal device convert the format of the second license into the first format.

21. The terminal device according to Claim 19,
wherein the modification detection information is a digital
signature of the first license, and

the judgment unit judges presence or absence of the
5 modification of the first license based on the digital signature
added to the second license.

22. A license distribution method for use in a content
distribution system including a license management server, a relay
10 server and a terminal device, the method comprising:

generating, in a first format, a first license for controlling
content use in the terminal device, the generation being executed
by the license management server;

generating a second license in a second format different
15 from the first format by adding, to the first license, modification
detection information for detecting a modification of the first
license, the generation being executed by the relay server;

converting the format of the second license into the first
format by obtaining the second license from the relay server, the
20 conversion being executed by the terminal device;

judging presence or absence of the modification of the first
license whose format is converted into the first format based on the
modification detection information, the judgment being executed
by the terminal device; and

25 using the content according to the first license in the case
where it is judged that no modification is made, the use being
executed by the terminal device.

23. Data with a structure including a header part and a data
30 part,

wherein the header part includes format identification
information and a digital signature of the data, the format

identification information being for identifying an object format in the case of converting data described in the data part into an object format and the digital signature of the data being obtained when the format of a license is converted into a specific format according to the format identification information.

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